

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A current collector and seal combination for an electrochemical sensor having comprising: a housing, in which are located; relatively flat sensing and counter electrodes within the housing, the relatively, flat sensing and counter electrodes arranged in a mutually parallel arrangement and in contact with a liquid electrolyte, and; a plurality of connection apertures in a wall of the housing directly adjacent corresponding edges of the sensing and counter electrodes, the current collector and seal combination including further comprising:

a plurality of relatively straight, flexible, metal current collector collectors, each of the plurality of currently collectors extending through a respective connection aperture of the plurality of apertures parallel to the mutually parallel sensing and counter electrodes with an end of each trapped against and in adapted for direct contact with one of the sensor's electrodes and

a compliant seal of a thermoplastic elastomeric material over-molded directly onto each of the flexible, metal current collectors, the compliant seal inserted into the one of the connection apertures, the current collector extending through the compliant seal,

the seal being in contact with the collector substantially throughout its length along the current collector and

the arrangement being such that compressive stress induced in the seal by reaction from the connection aperture urges the seal into distributed sealing contact with the current collector substantially throughout the length of the seal.

2. (Original) The current collector and seal combination of claim 1, wherein the seal is longer than its outer diameter or other major cross-sectional dimension.
3. (Original) The current collector and seal combination of claim 2, wherein the ratio of the seal length to outer diameter is of the order of 3:1 at least.
4. (Original) The current collector and seal combination of claim 1, claim 2 or claim 3, wherein the ratio of the length and/or the diameter of the seal to the diameter of the current collector is at least of the order of 10:1.
5. (Original) The current collector and seal combination of claim 1, claim 2, or claim 3, wherein the ratio of the length of the seal to the diameter of the current collector is at least of the order of 30:1.
6. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is injection moulded as an over-moulding onto the current collector.
7. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is moulded with a central through-bore for threading of the current collector through it.
8. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is moulded with a slot, nick or notch, for introduction of the current collector into it.
9. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is moulded as two complementary halves having a central groove for receiving the current collector.
10. (Original) The current collector and seal combination of claim 1, wherein the seal has one or more ridges extending around its outer circumference.

11. (Original) The current collector and seal combination of claim 1, wherein the seal has a cylindrical body and a larger diameter outer end boss.

12. (Original) The current collector and seal combination of claim 1, wherein the seal has a tapered nose.

13. (Original) An electrochemical gas sensor having:

a housing having at least one wall and a plurality of connection apertures through the wall, the apertures having bores,

sensing and counter electrodes in the housing,

a liquid electrolyte contained in the housing in chemical contact with the electrodes, and

a plurality of current collectors in electrical contact with respective ones of the respective electrodes;

the plurality of current collectors and respective electrodes characterized in that:

the plurality of current collectors in combination with a corresponding plurality of compliant seals are arranged in accordance with the current collector and seal combination of claim 1;

wherein the current collectors extend within their seals through respective ones of the apertures from their electrodes to outside the housing; and the compliant seals are in compression against both their current collectors and at least part of the bores of their apertures,

whereby the current collectors provide means for electrical contact outside the housing and the apertures are sealed.

14. (Previously Presented) The electrochemical sensor of claim 13, wherein the seal is an interference fit in the aperture.

15. (Previously Presented) The electrochemical sensor of claim 13, wherein the seals have cylindrical bodies and the larger diameter outer end bosses and the connection apertures have a complementary shape.

16. (Previously Presented) The electrochemical sensor of claim 13 including metallic end caps clipped to the housing and captivating the current collectors, thereby providing electrical connections for the sensor.

17. (Previously Presented) An electrochemical gas sensor having:

a housing having at least one wall and a plurality of connection apertures through the wall, the apertures having bores,

sensing and counter electrodes in the housing,

a liquid electrolyte contained in the housing in chemical contact with the electrodes, and

a plurality of current collectors in electrical contact with respective ones of the respective electrodes;

the plurality of current collector and respective electrodes characterized in that:

the plurality of current collectors in combination with a corresponding plurality of compliant seals are arranged in accordance with the current collector and seal combination of claim 1, wherein

the current collectors extend through respective ones of the apertures from their electrodes to outside the housing;

the compliant seals are in compression against both their current collectors and at least part of the bores of their apertures, whereby the current collectors provide means for electrical contact outside the housing and the apertures are sealed;

the current collectors are preliminarily located in the connection apertures;

the compliant seals are back-fillings of sealing material into the connection apertures; and the back-fillings are compressed by end caps.

18. (Original) The electrochemical sensor of claim 17, wherein the end caps are metallic, clipped to the housing, and captivate the current collectors, thereby providing electrical connections for the sensor.

19. (Original) The electrochemical sensor of claim 13, or claim 17, wherein the elastic modulii of the housing and of the seal differ by at least two orders of magnitude, the housing being stiffer and the seal being more compliant.

20. (Canceled) A method of manufacturing a current collector and seal combination for an electrochemical sensor, the method comprising the steps of: moulding a seal about the current collector using an injection moulding tool; indexing the current collector and moulded seal with respect to the tool; and repeating the moulding process.
21. (Canceled) A method of manufacturing a current collector and seal combination for an electrochemical sensor, the method comprising the steps of: moulding a sensor housing wall with a connection aperture about the current collector using an injection moulding tool, the current collector being free in the connection aperture; and moulding a compliant seal in the connection aperture.